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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,184	12/10/2001	Jeroen Anton Johan Leijten	NL 000681	1259

			EXAMINER
24737	7590	07/23/2004	GERSTL, SHANE F

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/016,184	LEIJTEN ET AL.
	Examiner	**Art Unit**
	Shane F Gerstl	2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2002 and 04 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/16/02*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-11 have been examined.

Papers Received

2.   Receipt is acknowledged of application, foreign priority reference, preliminary amendment, declaration, change in power of attorney, information disclosure statement and reference papers submitted, where the papers have been placed of record in the file.

Specification

3.   The abstract of the disclosure is objected to because line 10 of the abstract states "(Fig. 1)", but it is unclear what this phrase is for and whether it is meant to be a part of the abstract or not. Thus the Examiner is hindered from quickly determining the nature and gist of the invention. Also, the abstract is objected to because, and applicant is reminded that, the abstract should be in narrative form and generally limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

4.   The disclosure is objected to because of the following informalities: the specification is difficult to comprehend because it does not contain any sections delimited by headings as given by the recommended format in 37 CFR1.77(b). Appropriate correction required. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in

upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Oath/Declaration

5.   The oath or declaration filed 04 March 2002 is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

In this case, in the declaration filed 04 March 2002, the residence and post office

address information for Mr. Bink has been altered but the alterations have not been

initialed.

Drawings

6.   The drawings are objected to as not being completely clear. Figures 2 and 3, for

example, are difficult to understand because they do not have suitable descriptive

legends describing the units. 37 CFR 1.84 (o) shows that the examiner may require

such suitable descriptive legends for necessary understanding of the drawings. These

legends required by the examiner herein should contain as few words as possible.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8.   Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by

Tremblay et al (WO 00/33178).

9.   In regard to claim 1, Tremblay et al discloses a signal processing device

comprising

        a.   a plurality of functional units (UC1-UCn) (figure 5A, elements 520-526;

        figure 6, elements 620-626) for processing digital data based on an instruction

        word (figure 5C),

b.   and a plurality of register files (RF1-RFn) for storing results obtained from

respective ones of said functional units (figure 5A, elements RF0-RF3; figure 6,

elements 610-616);

c.   wherein said functional units are arranged to write a result to a

predetermined register of said register files by using a register address (RRI)

derived from said instruction word; [Figures 5A and 6 show that results are

written to the register files via the line that returns to the register files from the

functional units. Figure 5C along with page 12, lines 6-15 show that the

instruction word specifies registers to use in the different register files (segments)

using a certain number of bits, or an address (as described in the next paragraph

of the reference).]

d.   characterized by register allocation means (RA) for selecting at least two

of said register files (RF1-RFn) and for supplying said register address to said

selected register files, if said instruction word comprises a corresponding

indication. [Figure 3 and page 9, lines 25-30 show that the split register file

(multiple register files) holds all the operands for instructions. The figure shows

that broadcast writes are performed to each register file and thus they are all

selected for this write. As shown above, the instruction provides indication

showing the register address to write to, which then corresponds to the broadcast

write of multiple register files.]

10.   In regard to claim 2, Tremblay et al discloses a device according to claim 1,

characterized in that said functional units (UC1-UCn) are arranged to supply said

corresponding indication to said register allocation means (RA). [Since the indication is

the register address, the RA must receive the indication so the address of the broadcast

write is known.]

11.   In regard to claim 3, Tremblay et al discloses a device according to claim 1,

characterized in that said signal processing device is a programmable VLIW processor

(abstract), and said register files are partitioned register files (RF1-RFn), wherein a data

stationary instruction encoding is used. [As shown above, the register file is split into 4

separate or partitioned register files. Figure 5C shows a data stationary instruction

encoding where the encoding of the instruction is stationary such that the encoding is

fixed so that certain bits of data are always at certain locations in the word.]

12.   In regard to claim 4, Tremblay et al discloses a device according to claim 1,

characterized in that said corresponding indication is an information stating that said

result is to be written to said register address of said selected register files (as shown

above).

13.   In regard to claim 5, Tremblay et al discloses a device according to claim 1,

characterized in that said corresponding indication is a result index (RI) which refers to

a multicast or broadcast register in said selected register files. [As shown above, the

indication is an address or index to a broadcast register that is written to. Since this

broadcast register is written to, the data to be written is inherently the result of some

operation from a functional unit.]

14.   In regard to claim 6, Tremblay et al discloses a device according to claim 1,

characterized in that said register allocation means comprises demultiplexing means

(DM1-DM3) for demultiplexing said result and said register address (RRI) to said

selected register files in response to said corresponding indication. [As shown above,

the register files receive a register address to write to and a result for writing to the

address. Page 14, lines 22-23 show that the write ports of the register files receive data

from the functional units including the result and the address or indicator. Page 15,

lines 9-11 show that the write ports (for writing the result) comprise word lines for

addressing a cell or register (also shown in page 14, lines 27-28) and bit lines for

carrying the data (result). Thus the write port, which contains the result and address

data, is demultiplexed into separate word and bit lines that contain the address and

result, respectively.]

15.   In regard to claim 7, Tremblay et al discloses a device according to claim 1,

characterized in that said functional units are functional unit clusters (UC1-UCn).

[Figures 5A and 6 show the functional units and that these units are grouped into a

cluster. Another interpretation, would be to divide the functional units into two clusters,

one cluster comprising elements 520 and 522 (or 620 and 622) and another cluster

comprising elements 524 and 526 (or 624 and 626) and thus we have multiple

functional unit clusters.]

16.   In regard to claim 8, Tremblay et al discloses a method of supplying a signal

processing result to a plurality of registers arranged in different register files (RA1-RAn)

of a signal processing device (figure 5A, elements RF0-RF3; figure 6, elements 610-

616), said method comprising the steps of:

a.   determining a register address (RRI) based on an instruction word; Figure

5C along with page 12, lines 6-15 show that the instruction word specifies

registers to use in the different register files (segments) using a certain number of

bits, or an address (as described in the next paragraph of the reference)

supplying said register address to said plurality of register files, characterized by

the steps of

b.   and selecting said different register files based on a corresponding

indication in said instruction word and supplying said register address to said

selected register files. [Figure 3 and page 9, lines 25-30 show that the split

register file (multiple register files) holds all the operands for instructions. The

figure shows that broadcast writes are performed to each register file and thus

they are all selected for this write. As shown above, the instruction provides

indication showing the register address to write to, which then corresponds to the

broadcast write of multiple register files.]

17.   In regard to claim 9, Tremblay et al discloses a method according to claim 8,

characterized in that said corresponding indication is an information stating that said

result is to be written to said register address of said selected register files (as shown

above).

18.   In regard to claim 10, Tremblay et al discloses a method according to claim 8,

characterized in that said corresponding indication is a result index (RI) which refers to

a multicast or broadcast register in said selected register files (as shown above).

19.   In regard to claim 11, Tremblay et al discloses a method according to anyone of

claim 8, characterized in that said selection step comprises a demultiplexing step of

demultiplexing said result and said register address to said selected register files in

response to said corresponding indication. [As shown above, the register files receive a

register address to write to and a result for writing to the address. Page 14, lines 22-23

show that the write ports of the register files receive data from the functional units

including the result and the address or indicator. Page 15, lines 9-11 show that the

write ports (for writing the result) comprise word lines for addressing a cell or register

(also shown in page 14, lines 27-28) and bit lines for carrying the data (result). Thus the

write port, which contains the result and address data, is demultiplexed into separate

word and bit lines that contain the address and result, respectively.]

Conclusion

20.   The following is text cited from 37 CFR 1.111(c): In amending in reply to a

rejection of claims in an application or patent under reexamination, the applicant or

patent owner must clearly point out the patentable novelty which he or she thinks the

claims present in view of the state of the art disclosed by the references cited or the

objections made. The applicant or patent owner must also show how the amendments

avoid such references or objections.

21.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. The following patents have been cited to further show the art with

respect to separate register files for multiple function units in general.

US Pat No 6,205,543 to Tremblay discloses multiple register files and functional

units connected to respective register files in a VLIW processor where a result is written

to a register in one or all register files based on an indicator from the instruction word.

US Pat No 5,537,606 to Byrne illustrates multiple functional units that write to

corresponding register files based on a register address.

US Pat No 5,530,817 to Masubuchi teaches a VLIW processor with multiple

register files, each for a different cluster of functional units.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Shane F Gerstl whose telephone number is (703)305-

7305. The examiner can normally be reached on M-F 6:45-4:15 (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Eddie Chan can be reached on (703)305-9712. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Shane F Gerstl
Examiner
Art Unit 2183

SFG
July 19, 2004

RICHARD L. ELLIS
PRIMARY EXAMINER